

Chemical Analysis Report

WQAP-2017-08-04-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **RUN 7**
Request ID: **RQ-2017-07-31-25**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Tampa, FL 33637
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Certified by: Colin Wright, Program Administrator

Date Certified: 28-AUG-2017 09:54

A handwritten signature in black ink, appearing to read "Colin Wright", is placed over a light gray rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: LAKE WASTENA

Collection Date/Time: 08/03/2017 10:30

Field ID: G1SW0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919061	EPA 180.1 Rev. 2.0	Turbidity	2.1	A	NTU	P329740	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P329754	
		Sulfate	6.1		mg SO4/L	P329756	
	SM 2120 B	Color (true)	31		PCU	P329736	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P329976	
	SM 2540 C-97	TDS	96		mg/L	P330223	
	SM 2540 D-97	TSS	3	I	mg/L	P330231	
	SM 4500 F-C-97	Fluoride	0.072	I	mg F/L	P330092	
1919065	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P329979	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P329872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P330003	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P329789	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P330166	
1919069	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329734	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: ANN PARKER

Collection Date/Time: 08/03/2017 11:15

Field ID: G1SW0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919062	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P329740	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P329754	
		Sulfate	6.5		mg SO4/L	P329756	
	SM 2120 B	Color (true)	20	A	PCU	P329737	
	SM 2320 B-97	Total Alkalinity	12	A	mg CaCO3/L	P329976	
	SM 2540 C-97	TDS	101		mg/L	P330223	
	SM 2540 D-97	TSS	4	I	mg/L	P330231	
	SM 4500 F-C-97	Fluoride	0.091	I	mg F/L	P330094	
1919066	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P329979	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P329872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330003	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P329789	
	SM 5310 B-00	Organic Carbon	8.1		mg C/L	P330166	
1919070	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329734	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE HARVEY

Collection Date/Time: 08/03/2017 12:05

Field ID: G1SW0001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919063	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P329740	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P329754	
		Sulfate	6.0		mg SO4/L	P329756	
		Color (true)	77		PCU	P329737	
	SM 2320 B-97	Total Alkalinity	26		mg CaCO3/L	P329976	
	SM 2540 C-97	TDS	116		mg/L	P330223	
	SM 2540 D-97	TSS	2	I	mg/L	P330231	
	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P330092	
1919067	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P329979	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P329872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330003	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P329789	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P330166	
1919071	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329734	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LITTLE LK WILSON

Collection Date/Time: 08/03/2017 13:05

Field ID: G1SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919064	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P329740	
	EPA 300.0 Rev. 2.1	Chloride	59	A	mg Cl/L	P329754	
		Sulfate	4.4	A	mg SO4/L	P329756	
		Color (true)	63		PCU	P329737	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P329976	
	SM 2540 C-97	TDS	197		mg/L	P330223	
	SM 2540 D-97	TSS	4	I	mg/L	P330231	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P330092	
1919068	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P329979	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P329872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330003	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P329789	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P330166	
1919072	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329734	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LITTLE LK WILSON

Collection Date/Time: 08/03/2017 13:05

Field ID: G1SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G1SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1919098	EPA 8321B	Sucralose**	0.59		ug/L	P329553	
	USGS O-2060-01	2,4-D	0.029		ug/L	P329841	
		Diuron	0.0024	I	ug/L	P329841	
		Fenuron	0.0080	U	ug/L	P329841	
		Imidacloprid	0.055		ug/L	P329841	
		Bentazon	0.020		ug/L	P329841	MS
		Linuron	0.0040	U	ug/L	P329841	
		Acetaminophen**	0.0080	U	ug/L	P329841	
		MCP	0.0070	I	ug/L	P329841	
		Carbamazepine**	0.0029		ug/L	P329841	
		Triclopyr**	0.0040	U	ug/L	P329841	
		Primidone**	0.023		ug/L	P329841	
		Fluridone**	0.0040		ug/L	P329841	

Ref. Method and Comment:
 USGS O-2060-01: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P329740

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P329754

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P329756

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P329979

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P329872

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P330003

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330003

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329789

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329734

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P329553

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P329736

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P329737

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P329976

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P330223

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P330231

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
 Batch ID: P330092

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
 Batch ID: P330094

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P330166

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: USGS O-2060-01
 Batch ID: P329841

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P329754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.7		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329756

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	101		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330003

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	105		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P329553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	70.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P329976

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P330092

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
 Batch ID: P330094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P330166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P329841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	40 - 150
Acetaminophen	76.0		P	30 - 150
Bentazon	101		P	40 - 150
Carbamazepine	88.2		P	40 - 150
Diuron	81.5		P	40 - 150
Fenuron	82.1		P	40 - 150
Fluridone	111		P	40 - 150
Imidacloprid	81.2		P	40 - 160
Linuron	83.1		P	40 - 150
MCPP	91.6		P	40 - 150
Primidone	84.5		P	40 - 150
Triclopyr	90.3		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P329754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919061	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P329756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919061	Sulfate	96.3		P	90 - 110
1919064	Sulfate	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P329872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919041	Kjeldahl Nitrogen	96.0	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P330003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P330003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919044	NO2NO3-N	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P329789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919044	Total-P	93.3	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P329734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919042	O-Phosphate-P	94.8	96.1	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P329553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1918333	Sucralose	117	116	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P330092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919795	Fluoride	99.1	103	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P330094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919062	Fluoride	101	99.6	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P330166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919047	Organic Carbon	98.6	101	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P329841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919076	Acetaminophen	98.2	96.7	P/P	30 - 150
1919076	Bentazon	38.2	38.8	F/F	40 - 150
1919076	Carbamazepine	83.9	72.7	P/P	40 - 150
1919076	Diuron	48.5	53.8	P/P	40 - 150
1919076	Fenuron	73.4	64.3	P/P	40 - 150
1919076	Fluridone	67.7	55.6	P/P	40 - 150
1919076	Imidacloprid	139	123	P/P	40 - 160
1919076	Linuron	62.3	65.5	P/P	40 - 150
1919076	MCPP	121	111	P/P	40 - 150
1919076	Primidone	102	80.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P329841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919076	Triclopyr	112	123	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P329740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919061	Turbidity	0.966	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P329754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919064	Chloride	0.0162	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P329756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919064	Sulfate	0.781	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P329979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919044	Ammonia-N	0.306	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P329872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919041	Kjeldahl Nitrogen	0.697	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P330003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919044	NO2NO3-N	0.927	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919044	Total-P	4.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919042	O-Phosphate-P	1.36	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P329553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1918333	Sucralose	1.08	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P329736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919015	Color (true)	0.534	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P329737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919062	Color (true)	4.45	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P329976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919062	Total Alkalinity	2.12	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P330223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919040	TDS	2.34	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P330092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919795	Fluoride	2.40	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P330094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919062	Fluoride	1.04	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P330166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919047	Organic Carbon	1.74	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P329841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919076	2,4-D	0.984	Spike	P	0 - 30
1919076	Acetaminophen	1.46	Spike	P	0 - 30
1919076	Bentazon	0.907	Spike	P	0 - 30
1919076	Carbamazepine	13.8	Spike	P	0 - 30
1919076	Diuron	7.89	Spike	P	0 - 30
1919076	Fenuron	13.2	Spike	P	0 - 30
1919076	Fluridone	11.9	Spike	P	0 - 30
1919076	Imidacloprid	9.50	Spike	P	0 - 30
1919076	Linuron	4.98	Spike	P	0 - 30
1919076	MCPP	9.09	Spike	P	0 - 30
1919076	Primidone	24.0	Spike	P	0 - 30
1919076	Triclopyr	8.97	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1919098
Field Sample ID: G1SW0006

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	65.6	P	40 - 160
USGS O-2060-01	2,4-D-d3	116	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	90.9	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	83.2	P	30 - 160
USGS O-2060-01	Diuron-d6	68.7	P	30 - 160
USGS O-2060-01	Primidone-d5	80.0	P	30 - 160

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A78163

Included Lab Sample IDs: 1919061, 1919062, 1919063, 1919064

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	94.7	96.8	P/P	90 - 110
Chloride	97.6	94.7	P/P	90 - 110
Sulfate	102	96.4	P/P	90 - 110
Sulfate	96.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A78204

Included Lab Sample IDs: 1919069, 1919070, 1919071, 1919072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	98.3	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A78208

Included Lab Sample IDs: 1919061, 1919062, 1919063, 1919064

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	99.1	P/P	85 - 115
Color (true)	99.1	99.4	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A78212

Included Lab Sample IDs: 1919061, 1919062, 1919063, 1919064

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78248

Included Lab Sample IDs: 1919065, 1919066, 1919067, 1919068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A78308

Included Lab Sample IDs: 1919061, 1919062, 1919063, 1919064

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A78309

Included Lab Sample IDs: 1919065, 1919066, 1919067, 1919068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A78315

Included Lab Sample IDs: 1919098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	92.8	82.8	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A78317

Included Lab Sample IDs: 1919065, 1919066, 1919067, 1919068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A78343

Included Lab Sample IDs: 1919061, 1919062, 1919063, 1919064

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.5	P/P	90 - 110
Fluoride	99.5	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78351

Included Lab Sample IDs: 1919065, 1919066, 1919067, 1919068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	104	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A78375

Included Lab Sample IDs: 1919065, 1919066, 1919067, 1919068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	99.4	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A78403

Included Lab Sample IDs: 1919098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	131	112	P/P	50 - 150
Acetaminophen	83.6	79.4	P/P	60 - 150
Bentazon	111	102	P/P	50 - 150
Carbamazepine	82.0	86.8	P/P	60 - 150
Diuron	80.7	79.9	P/P	60 - 150
Fenuron	82.5	79.9	P/P	60 - 150
Fluridone	114	110	P/P	60 - 160
Imidacloprid	81.1	90.9	P/P	60 - 150
Linuron	93.8	84.1	P/P	60 - 150
MCPP	101	99.9	P/P	50 - 150
Primidone	91.7	92.6	P/P	60 - 150
Triclopyr	130	96.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				0.966	
EPA 300.0 Rev. 2.1	Chloride	93.7	99.3		0.0162	
	Sulfate	97.1	98.2	96.3	0.781	
EPA 350.1 Rev. 2.0	Ammonia-N	101				0.306
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	96.0	94.8		0.697
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	106	104		0.927
EPA 365.1 Rev. 2.0	Total-P	94.1	93.3	98.0		4.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105	94.8	96.1		1.36
EPA 8321B	Sucralose	70.0	117	116		1.08
SM 2120 B	Color (true)				0.534	
	Color (true)				4.45	
SM 2320 B-97	Total Alkalinity	102			2.12	
SM 2540 C-97	TDS				2.34	
SM 4500 F-C-97	Fluoride	97.9	99.1	103		2.40
	Fluoride	98.4	101	99.6		1.04
SM 5310 B-00	Organic Carbon	101	98.6	101		1.74
USGS O-2060-01	2,4-D	103				0.984
	Acetaminophen	76.0	96.7	98.2		1.46
	Bentazon	101	38.2	38.8		0.907
	Carbamazepine	88.2	83.9	72.7		13.8
	Diuron	81.5	48.5	53.8		7.89
	Fenuron	82.1	64.3	73.4		13.2
	Fluridone	111	67.7	55.6		11.9
	Imidacloprid	81.2	123	139		9.50
	Linuron	83.1	62.3	65.5		4.98
	MCP	91.6	121	111		9.09
	Primidone	84.5	80.3	102		24.0
	Triclopyr	90.3	112	123		8.97

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1919061, 1919062, 1919063, 1919064
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1919061, 1919062, 1919063, 1919064
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1919061, 1919062, 1919063, 1919064
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1919065, 1919066, 1919067, 1919068
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1919065, 1919066, 1919067, 1919068
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1919065, 1919066, 1919067, 1919068
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1919065, 1919066, 1919067, 1919068

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1919069, 1919070, 1919071, 1919072
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1919098
SM 2120 B / E31780	True Color measured at 450 nm	1919061, 1919062, 1919063, 1919064
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1919061, 1919062, 1919063, 1919064
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1919061, 1919062, 1919063, 1919064
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1919061, 1919062, 1919063, 1919064
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1919061, 1919062, 1919063, 1919064
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1919065, 1919066, 1919067, 1919068
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1919098
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1919098

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	08/04/2017			08/04/2017 16:09	DeAsia Armster	1919061, 1919062, 1919063, 1919064
EPA 300.0 Rev. 2.1	08/04/2017			08/05/2017	Julia Storbeck	1919061, 1919062, 1919063, 1919064
EPA 350.1 Rev. 2.0	08/04/2017			08/09/2017	Sofia Elnemr	1919065, 1919066, 1919067, 1919068
EPA 351.2 Rev. 2.0	08/04/2017	08/09/2017	Adrian Shelby	08/11/2017	Joseph Suarez	1919065, 1919066, 1919067, 1919068
EPA 353.2 Rev. 2.0	08/04/2017			08/10/2017	Beverly Y. Sanders	1919065, 1919066, 1919067, 1919068
EPA 365.1 Rev. 2.0	08/04/2017	08/07/2017	Sima Feizi	08/08/2017	Lipi Saha	1919065, 1919066, 1919067, 1919068
EPA 365.1 Rev. 2.0 dissolved	08/04/2017			08/04/2017 14:36	Ping Hua	1919069
	08/04/2017			08/04/2017 14:37	Ping Hua	1919070
	08/04/2017			08/04/2017 14:38	Ping Hua	1919071
	08/04/2017			08/04/2017 14:39	Ping Hua	1919072
EPA 8321B	08/04/2017	08/08/2017	Julie Michelle Frank	08/08/2017	Mohammad Ghaffari	1919098
SM 2120 B	08/04/2017			08/04/2017 15:05	Tanya Welborn	1919061
	08/04/2017			08/04/2017 15:09	Tanya Welborn	1919062
	08/04/2017			08/04/2017 15:10	Tanya Welborn	1919063
	08/04/2017			08/04/2017 15:11	Tanya Welborn	1919064
SM 2320 B-97	08/04/2017			08/09/2017	Dale L. Simmons	1919061, 1919062, 1919063, 1919064
SM 2540 C-97	08/04/2017			08/09/2017	Yijie Li	1919061, 1919062, 1919063, 1919064
SM 2540 D-97	08/04/2017			08/09/2017	Yijie Li	1919061, 1919062, 1919063, 1919064
SM 4500 F-C-97	08/04/2017			08/11/2017	Dale L. Simmons	1919061, 1919062, 1919063, 1919064
SM 5310 B-00	08/04/2017			08/12/2017	Sofia Elnemr	1919065, 1919066, 1919067, 1919068
USGS O-2060-01	08/04/2017	08/10/2017	Hoor Shaik	08/11/2017	Juyoung Kim	1919098